



Forest Insect & Disease Management

Survey Report

S-14-75

November 1975

COOPERATIVE SPRUCE BUDWORM AERIAL SURVEY

MINNESOTA, 1975

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INTRODUCTION

The spruce budworm, Choristoneura fumiferana, (Clem.) is still the primary insect problem in spruce-fir stands in northeastern Minnesota. The infestation which reached epidemic population levels in the late 1960's continues to cause severe defoliation and tree mortality in stands in the south central portions of the Superior National Forest.

OBJECTIVE

The purpose of the aerial survey was to delineate major areas of defoliation and tree mortality caused by spruce budworm in Minnesota.

METHOD

Flights were made 1,500 feet above ground at 110 miles per hour. All flights were made between 9:30 a.m. and 3:30 p.m. on July 8 and 9. A. Hastings and Bruce Anderson, S&PF, FI&DM, and Gerald Hecht, Minnesota DNR, sketch-mapped spruce-fir defoliation and tree mortality.

RESULTS

The most extensive and severe budworm-caused defoliation and mortality occurred in the south central portion of the Superior National Forest and parts of the Cloquet Valley State Forest. Small scattered areas of moderate to heavy defoliation were observed on other parts of the national forest.

The gross acres defoliated (including all forest types) is:

Moderate to heavy: tree canopy showing obvious brown or reddish discoloration (26-50% defoliation) 46,000 acres, all within the national forest boundary.

Severe defoliation and tree mortality: tree canopy showing grey coloration (51-100% defoliation) 990,000 acres of which 691,000 are within the national forest boundary.

CONCLUSIONS

Spruce-fir stands in T56N through T60N; R4W to R14W are in critical condition due to the successive years of severe defoliation. These stands constitute a high fire hazard situation due to fir mortality. The general movement of epidemic budworm populations is toward the south and west from the present location.

RECOMMENDATION

Continue efforts to salvage recently killed and severely defoliated fir whenever possible.

